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Front and back covers: Detail of skirt, attributed to Vizarrón de Montes, Querétaro, Mexico. The Textile Museum 1976.24.11, given in memory of Rene d'Harnoncourt by his family. See Davis, p. 56, fig. 9.

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Ecuador's Second Oldest Textile

Karen Olsen Bruhns

In the pre-Columbian Andean world, textiles appear to have been highly prestigious art and production forms. We see this most clearly among the historic Inca, who consistently ranked cloth just behind humans and camelids, which were often combined into a single category of "living things." This is evident in state accounts, for example, on knotted cords, khipu; this category precedes mineral or metallurgical wealth (Murra 1982). Not only do both history and ethnography attest to this, but also the preservation of textiles in arid coastal Peru and northern Chile has allowed us to appreciate the remarkable technical and artistic expertise of the pre-Columbian weavers in these regions. In the highlands, however, and in the northern Andes, preservation conditions have left us with little direct evidence concerning local developments of textile art. This is doubly unfortunate since the earliest archaeological evidence for the domestication of cotton, spinning with a spindle and weight, and the invention of the heddle loom occur in coastal Ecuador (Marcos 1979).

Most information concerning pre-Columbian Ecuadorian textiles comes from imprints upon sherds. The earliest among those currently known is an imprinted lump of clay from Late Valdivia contexts at the site of Real Alto in the Chanduy Valley of southern coastal Ecuador (Site OGCh-12), dating to sometime before 2000 B.C. (Marcos 1979). The fired clay preserves the mark of two separate textiles, one an open plain weave in a square count; the other a more tightly woven plain weave with paired yarns used for the warp and weft. The fineness of the threads, presumably cotton, and the details of the impressions of the two fabrics led the excavator, Jorge Marcos, to suggest that both fabrics must have been woven on a heddle loom. Spindle whorls and other weaving tools are common in Valdivia sites and continue to be common in later sites along the coast.

The invention of ceramic mold technology in Late Chorrera times and the regular use of textiles to transfer damp clay slabs to the mold, a technology that has left many impressions of textiles, has permitted the partial reconstruction of coastal textile traditions between ca. 1000 B.C. and ca. A.D. 500 (Cummins 1992; Stothert et al. 1991). Moreover, realistically modeled vessels and figurines show us some of the uses of cloth and suggest its importance in ritual and everyday life.

Considerably fewer archaeological excavations in the Ecuadorian highlands have been done than on the coast. Although weaving equipment, including spindle whorls, has been found at many sites, there is virtually no information concerning what was being woven or the place of cloth within local socio-economic systems. Most highland cultures of the Formative and Regional Developmental periods (roughly 1500 B.C.-A.D. 500) did not produce ceramic figurines or vessels showing humans, and the geometric designs painted on ceramics seldom refer to textile designs. Unlike the coast, where fabrics seem to have been often used for figurine production and/or to set drying ceramics upon, since imprints are common, the highlanders apparently simply put their unfired ceramics on the ground, much as they do today. Thus, the fortunate discovery of a sherd with a textile imprint on it in an early level in the Late Formative period site of Pirincay in the province of Azuay gives us one of the few pieces of evidence concerning early highland textile arts.

Pirincay is a small site located on a ridge spur in the eastern part of the Paute Valley (fig. 1). From prehistoric times until the late 1970s, the Paute Valley was a major route of communication between the eastern forest and the highland valleys. The Paute Valley has access to the coast via two routes, each of which leads to different climatological and cultural zones. The first is via the río Jubones, which connects the large highland basin of Cuenca with the southern Ecuadorian coast and northern Peru. The second goes north to the valley of Cañar and follows the

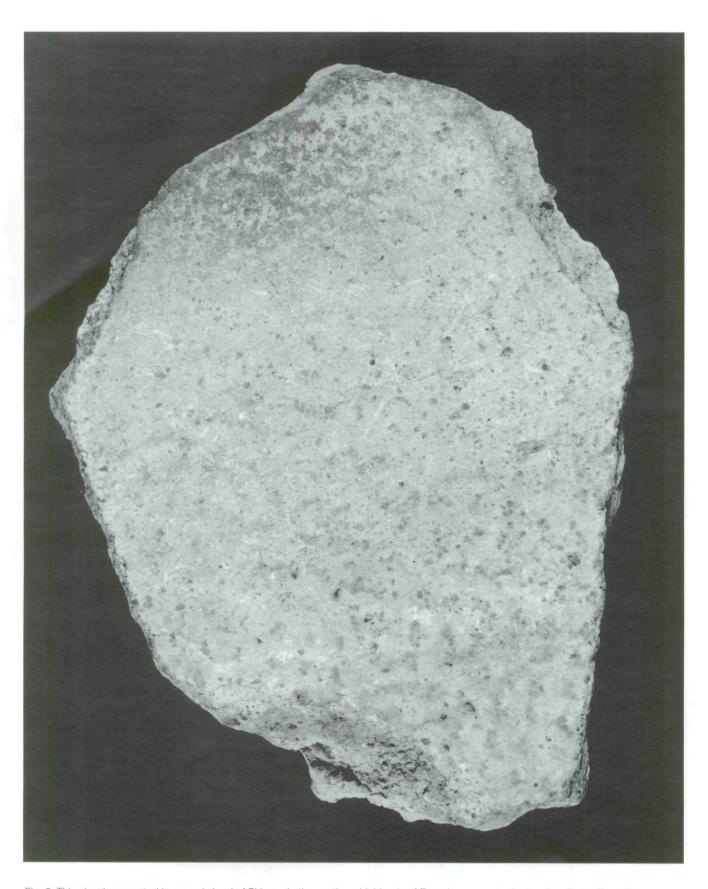


Fig. 2. This sherd, excavated in an early level of Pirincay in the southern highlands of Ecuador, suggests the imprint of a textile pattern. The sherd once formed part of the bottom of a flaring bowl of a type that was common in the Late Formative period in this area (see fig. 3).

río Cañar west to the huge Guayas basin. The immense rivers of the basin, on which rafts and canoes seem to have provided transport from early in the Formative, give easy access to the coast. Pirincay itself was founded as a trading and craft-production center in the Late Formative, approximately 1500 B.C. To judge from major archaeological finds, rock crystal beads were Pirincay's major product and much desired by the people of the coastal Chorrera culture. Other archaeological evidence suggests ties with the northern Ecuadorian highlands, the southern Ecuadorian/northern Peruvian coast, and somewhat later, with the adjacent Upper Amazon region¹.

The imprinted sherd comes from excavation unit F, level 023, a layer of dirt fill under a low stone platform. This layer represents the second occupation level of the site. Abundant ceramics found in this stratigraphic context are typical of the assemblages from the southern highlands in this time period, such as those of contemporary Chaullabamba and Cerro Narrío, in the Tomebamba and Cañar Valleys, respectively. Southern highland ceramics clearly show their origin in the coastal Chorrera style(s) with their thin walls and the highly polished fine red slip found on flaring bowls, tiny neckless globular jars (called tecomates, the Mexican term for this shape commonly used in Ecuador) of the sort perhaps used for the lime (calcium carbonate) used in chewing coca leaf, and on the occasional spouted bottle. Iridescent painted bowls and some sherds of other vessels imported from the coast found in this level also attest to trade with coastal Chorrera and Engoroy sites, as do Spondylus shell beads and other shells and shell artifacts.

Although there are no direct radiocarbon dates from level F023, equivalent levels in adjacent units have yielded a series of dates which can be conservatively interpreted as somewhere around 1300–1200 B.C.² The radiocarbon dates all correspond to the Late Formative period, a time of considerable cultural and technological change in Ecuador.

The sherd, which measures approximately 4×3 centimeters, is a part of the bottom of a flaring bowl with a polished red interior, which was a common form in the earliest occupation levels of Pirincay. The entire interior of this type of bowl was usually painted and polished solid red, or red and white (red sides, white bottom is the most common color combination), while the exterior was left the creamy to grayish white

color of the local kaolinite clays. Generally the exterior of the vessel was simply wiped smooth. This combination of color and surface treatments is so characteristic of this form that it permits certain identification of this vessel type from a simple sherd.

Although the exterior bases of vessels in the Pirincay/southern highland Late Formative ceramic tradition commonly show no markings, in this one instance a faint imprint of cloth is visible on the smoothed clay (fig. 2). The faintness of the impression indicates that the vessel must have been half dry when it was set upon a piece of cloth (fig. 3).

Because of the shallowness of the imprint, regular high resolution, three-dimensional, and Scanning Electron Microscope (SEM) photography were employed in an effort to bring the image up more clearly.3 These methods had limited results. The enlarged high-resolution photographs show almost as much detail as the sherd itself (fig. 2). The SEM photographs, done on an Hitachi S-520 SEM with the specimens (a positive imprint of the sherd made with dental impression material) sputter-coated with gold/ palladium, have their best resolution at about 40x. The fact that the imprint was not on a slipped portion of the vessel, however, means that there is considerable "noise" from inclusions in the clay paste, which makes it difficult to see the patterns (fig. 4).

Visual inspection of the sherd and photographs suggests that the fabric was woven from fine threads. No selvedge is visible, so warp and weft are not distinguishable. The impression is so delicate that the twist of the yarns cannot be ascertained, although it is fairly evident that they are single, not plied, since plying is generally more visible than the initial spinning twist. The weave is also very faint: depending on the way you hold the sherd, it looks either like a plain weave or possibly a 2 x 2 twill (fig. 5). Twills



Fig. 3. The drawing shows how such a flaring bowl might have been placed on a textile to dry. Drawing by Tom Weller.

tend to be uncommon in Andean textile traditions, so a plain weave is, perhaps, the better guess, although twill fabrics have been found in both the Ecuadorian highlands and on the coast in later contexts. The textile may have had a border or a stripe with a simple pattern of X's or chevrons. But the evidence is slim and somewhat speculative. It is difficult, if not impossible, to render this pattern photographically, although it is tantalizingly visible on the sherd itself.

The thread used for the textile appears to be approximately the diameter of buttonhole twist, i.e., about 0.05 millimeter. It is fine and even. To determine the material of a textile from an imprint is generally impossible, as has been frequently remarked (King 1978). In the case of highland Ecuador during the relevant time period, cotton, perhaps camelid fiber, and several

Fig. 4. This SEM photograph of the imprint does not show the textile pattern clearly because the imprint, made on an unpainted portion of the vessel, contains much "noise" from inclusions in the clay paste.



vegetable fibers would have been available. Cotton had been domesticated on the coast many centuries earlier. It is also notable that the Paute Valley is one of the few places in the southern highlands where it is possible to grow cotton (Damp, Pearsall, and Kaplan 1987). Camelids are not known to have been present locally until about eight hundred years later, although the paucity of excavation in the highlands, coupled with the complete lack of archaeological data whatsoever for the centuries between the later Paleo-Indian Period and the Late Formative period, precludes any definite exclusion of these animals from consideration (Miller and Gill 1990). William Conklin believes that the imprint looks like it might have been of a textile made with a hard-surfaced thread, which might suggest leaf fiber from a plant of the genus Furcraea (personal communication, July 1999). Although at least one species of the genus Agave is presently common in Ecuador, it was a colonial import; pre-Hispanic vegetable fibers in Ecuador had to come from members of either the genus Furcraea, or from other plants, such as bromeliads.

Another important consideration is whether the textile was locally produced. The site of Pirincay, a trading center, has yielded ample evidence of exchange with the coast, an area with a long-established textile tradition. It is possible that this cloth came up wrapped around some Spondylus beads or protecting a piece of fragile pottery such as the little Chorrera bottles whose remains have also been found in the early occupational levels. It is also possible that textile manufacture was another coastal introduction, given that the ceramic tradition of the sierra is coastal in derivation and since the coastal cultures had been spinning and weaving for many centuries by the time Pirincay was founded. Spindle whorls have been found in the lower levels of the site, including F023. The frequency of these implements suggests that spinning was common at Pirincay even in its earliest occupations (Bruhns 1990).

We have little idea of the functions of textiles in the highlands. We know next to nothing about highland clothing: the few figurine fragments found in highland sites of the Late Formative period all seem to be coastal imports. Since highland Ecuador has a cool climate, the coastal habit of going about nude, or nearly so, may not have been a desired option for these Late Formative period farmers, artisans, and traders. Certainly at the time of the Conquest, they were all wearing enveloping clothing of camelid hair. Aside

from this imprint and a few late pre-Hispanic textile fragments recovered at the Inca sites of Ingapirca and Tomebamba,⁴ we have little direct evidence concerning the history of the textile arts in the southern sierra of Ecuador.

This situation is mirrored throughout Ecuador; actual textile remains are very rare. In the northern highlands, the earliest textile remains known are some fragmentary clothing and funerary wrappings from the tombs of La Florida on Pichincha Volcano near Quito, dating to approximately A.D. 500 (Doyon-Bernard 1994). These show a range of simple weaves in cotton. A single camelid hair textile—a twill sewn with metal seguins—was identified in these tombs. There are some other textile fragments from Carchi, from the general vicinity of Quito and Riobamba, a few well-preserved and decorated pieces from the terminal pre-Hispanic La Companía cemetery on the coast, as well as the fragments from Ingapirca and Tomebamba. There are also a small number of looted pieces of uncertain provenience. The most complete of these, the clothing on a supposedly Cañari mummy displayed in the Museo del Banco Central in Quito, can be shown to have been gathered from various places, perhaps even including Peru, and then used to dress a composite mummy, with head and body from different people.

Fortunately, as mentioned, in coastal Ecuador textile imprints on ceramics are fairly

common. Aside from the unique Valdivia specimen published by Marcos (1979), there are some Late Formative period imprints documented by the late Emilio Estrada in the 1950s, along with some actual textile fragments looted from coastal and highland sites (Estrada 1957). Karen Stothert and her colleagues have documented some of the earlier ceramic period coastal traditions, specifically those of the Late Chorrera, Bahia, Jama-Coaque, and Guangala phases (ca. 1000 B.C. to A.D. 500) (Stothert et al. 1991). They suggest that, because the imprints are all of highly standardized plain weaves and from textiles that had not been repaired in any way, many of the Chorrera textiles may have been manufactured especially for use in ceramics production. The later Bahia and Jama-Coaque cultures seem to have used rags in ceramics making; a greater variety of weaves, including gauzes, plain weaves, and even twills appear as imprints, although plain weaves are by far the most common. The paucity of archaeological data, combined with equally scant early historical accounts that mention clothing and textiles used to pay tribute, are all that survive of what was evidently a series of very important textile industries. The Pirincay sherd, faint though its imprint is, tells us that the Andean tradition of fine weaving was established early in the highlands as well as along the coast.



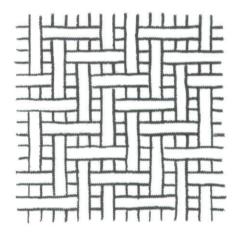


Fig. 5. Possible weaves and decorations of the original textile. The plain-weave pattern is the more likely of the two patterns because twills are much less common, though some have been found in both the Ecuadorian highlands and on the coast in later contexts. The border of the textile may have had a simple pattern of either X's or chevrons. Drawing by Tom Weller.





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Notes

- 1. Bruhns 1988–89, Bruhns 1991, Bruhns 1995.
- 2. These are: Unit A, level A091 3000±120 B.P., 1320–1040 B.C. calibrated; unit E, levels E008 2800±280 B.P., 1260–800 B.C. calibrated; and E011 3030±540 B.P., 1520–1000 B.C. calibrated.
- 3. William Conklin's three-dimensional color photograph of the imprint may be seen online at http://userwww.sfsu.edu/~kbruhns.
- 4. Idrovo Urigüen 2000, 292–293. The Ingapirca textile remains are not published, although they are on display in the site museum.

References

Bruhns, Karen Olsen

- 1988– Intercambio entre la sierra y la costa en 1989 el Formativo Tardío, nuevas evidencias del Azuay, Relaciones Interculturales en el Area Ecuatorial del Pácifico Durante la Epoca Precolombina, pp. 57–74. Edited by Jean-François Bouchard and Mercedes Guinea. British Archaeological Reports, International Series, Oxford.
- 1990 Early Prehispanic Spinning and Weaving Equipment from Ecuador, *The Textile Museum Journal*, vols. 27–28, 1988–89, pp. 70–77. Washington.
- 1991 Los tallares de cristal de roca en Pirincay, Provincia del Azuay, *Miscelánea Antropológica Ecuatoriana* 7, pp. 91–100. Museo del Banco Central, Quito.
- 1995 Las culturas peruanas y el desarrollo cultural en los Andes septentrionales, *Memoria* 4, pp. 251–67. Instituto de Historia y Antropología Andino (MARKA), Quito.
- n.d. The Story of a Sherd: The Second Oldest Textile in Ecuador. Photography by William J Conklin. Department of Anthropology, San Francisco State University, San Francisco. http://userwww.sfsu.edu/~kbruhns.

Cordero, Luis

1950 Enumeración botánica. Provincias del Azuay y Cañar. Afrodesio Aguado, Madrid.

Cummins, Thomas R.

1992 La tradición en el arte prehispánico ecuatoriano: la cerámica de Chorrera y Jama-Coaque, *Signos Amerindios*, pp. 63–81. Edited by Francisco Valdez y Diego Veintimilla. Dinaediciones/Ediciones Colibrí, Ouito.

Damp, Jonathan E., Deborah M. Pearsall, and Lawrence T. Kaplan

1987 La evidencia agricola en Valdivia Temprana, Miscelánea Antropológica Ecuatoriana 7, pp. 49–53. Museo del Banco Central, Quito and Guayaquil.

Doyon-Bernard, Suzette J.

1994 La Florida's Mortuary Textiles: The Oldest Extant Textiles from Ecuador, *The Textile Museum Journal*, vols. 32–33, 1993–1994, pp. 82–102. The Textile Museum, Washington.

Estrada, Emilio

1957 Ultimas civilizaciones pre-históricas de la cuenca del río Guayas. Publicación # 2, Museo Victor Emilio Estrada, Guayaquil.

Idrovo Urigüen, Jaime

2000 Tomebamba: Arqueología e Historia de una Ciudad Imperial. Banco Central del Ecuador, Dirección Cultural Regional, Cuenca.

King, Mary Elizabeth

1978 Analytical Methods and Prehistoric Textiles, American Antiquity 43/1, pp. 89–96. Society for American Archaeology, Washington.

Marcos, Jorge G.

1979 Woven Textiles in a Late Valdivia Context (Ecuador), *The Junius B. Bird Pre-Columbian Textile Conference*, pp. 19–30. Edited by Ann P. Rowe, Elizabeth P. Benson, and Anne-Louise Schaffer. The Textile Museum and Dumbarton Oaks, Washington.

Miller, George R., and Anne L. Gill

1990 Zooarchaeology at Pirincay, a Formative Period Site in Highland Ecuador. *Journal of Field Archaeology*, vol. 17, no. 1, pp. 49–68. Association for Field Archaeology, Boston University Press, Boston.

Murra, John V.

1982 The Mit'a Obligations of Ethnic Groups to the Inka State, *The Inca and Aztec States* 1400–1800: Anthropology and History, pp. 237–62. Edited by George A. Collier, Renato I. Rosaldo, and John D. Wirth. Academic Press, New York and London.

Stothert, Karen E., Kathleen A. Epstein, Thomas R. Cummins, and Maritza Freire

1991 Reconstructing Prehistoric Textile and Ceramic Technology from Impressions of Cloth in Figurines from Ecuador, *Materials Issues in Art and Archaeology II*, pp. 767–776. Edited by Pamela Vandiver et al. Materials Research Society Symposium Proceedings 185, Pittsburgh.

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